

### REMARKS

In response to the Office Action dated 24 May 2002, claims 27 and 43 are amended. No new matter has been added. Claims 27-53 are pending in the case. Reexamination and reconsideration of the claims is respectfully requested.

In paragraph 2 on page two of the Office Action, the Abstract was objected to because of the terminology.

Applicant respectfully traverses the objection, but has amended the Abstract to overcome the objections. Applicant respectfully submits that the Abstract describes the nature of the invention. However, Applicant respectfully submits that the Abstract should not be used for interpreting the scope of the claims.

Therefore, in view of the above remarks, Applicant respectfully requests that Examiner withdraw the objections.

In paragraph 4 on page 3 of the Office Action, claims 27-38 and 43-51 were rejected under 35 U.S.C. §102 (b) as being anticipated by Dennison et al. In paragraph 6 on page 7 of the Office Action, dependent claims 39-42 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dennison in view of Menich. According to the Office Action, Dennison teaches Applicant's invention substantially as claimed.

Applicant respectfully traverses the rejection but has amended the claims to clarify the invention. Applicant respectfully submits that there are patentable differences between the cited references and Applicant's invention as recited in the amended claims. Applicant's invention differs from the cited reference in at least the following respects.

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Dennison fails to disclose or suggest at least deciding (S4) on the basis of the result of said processing (S3), whether a first handover condition based on location information is fulfilled or not, when the first handover condition is not fulfilled, checking (S5) subscriber specifications, whether or not another measurement related to a handover is to be performed, wherein said another measurement results in a determination of a second handover condition.

Rather, Dennison merely discloses executing location based and signal strength based handover procedures successively (see, Fig. 11 A, B in Dennison). This occurs, in Dennison, when a mobile moves into a network that does not offer the handover procedure proposed by Dennison, i.e. this other measurement is not applicable in parallel when the location-based measurement is not executable. (col. 6, lines 5 to 9). Thus, Dennison does not describe nor even suggest to provide a handover related measurement, which is decided to be executed (or not) on the basis of subscriber specification, in parallel to the "normal" measurement.

In contrast, this aspect of the Applicant's invention is supported by the Specification in a variety of places, for example, in steps S4, S5, S6 of Fig. 2, (and Specification at page 9, lines 4 to 36), after the determination that a first handover condition (step S3) is not fulfilled (step S4, NO), it is further checked whether another measurement is to be executed (step S5) for deciding on a handover (i.e. second handover condition). The decision whether to execute another measurement (or not) is based on subscriber specification. That means, that the second measurement may be, for example, prohibited by subscriber specification (step S5, NO). On the other

hand, when another measurement is to be executed (step S5, YES) the type of measurement is selected according to subscriber specification (step S6).

In other words, in Applicant's invention, after a first measurement (step S3) for a first handover condition (i.e., location based and also signal quality based, as disclosed at least in Applicant's claim 1 and in the Specification on page 9, lines 7 to 10), further steps S4, S5 (and S6) are performed for another handover measurement.

Menich fails to remedy the deficiencies of Dennison. Menich was cited to teach features lacking in Dennison with regards to Applicant's dependent claims. However, Menich also fails to disclose or suggest at least deciding (S4) on the basis of the result of said processing (S3), whether a first handover condition based on location information is fulfilled or not, when the first handover condition is not fulfilled, checking (S5) subscriber specifications, whether or not another measurement related to a handover is to be performed, wherein said another measurement results in a determination of a second handover condition. Thus, Applicant's invention is patentable over Menich.

Therefore, in view of the above remarks, Applicant's independent claims 27 and 43 are patentable over Dennison and Menich.

Because claims 28-42 and 44-51, which depend directly or indirectly from claims 27 and 43, respectively, include the features recited in the independent claims as well as additional features, Applicant respectfully submits that claims 28-42 and 44-51 are also patentably distinct over the cited references. Nevertheless, Applicant is not conceding the correctness of the Examiner's rejection with respect to such dependent claims and reserves the right to make additional arguments if necessary.

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In view of the amendments and reasons provided above, it is believed that all pending claims are in condition for allowance. The amendments clarify the patentable invention without adding new subject matter. Applicant respectfully requests favorable reconsideration and early allowance of all pending claims.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicant's attorney of record, Michael B. Lasky at 952-253-4106.

Respectfully submitted,

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MBL/jsa/tjs

## Appendix A Marked Up Version of the Entire Claim Set

Please amend claims 27 and 43 as follows:

27. (Amended Once) A method for performing a handover procedure for  
a mobile station (MS) communicating in a communication network and being  
movable therein,  
said communication network comprising  
a plurality of base transceiver stations being adapted to perform a  
communication with said mobile station (MS) within its coverage area,  
**said method comprising the steps of**  
processing (S3) location information related to the mobile station (MS) by  
comparing it with position information related to the base transceiver stations (BTS 1A,  
**BTS 1B, BTS 2, BTS 3),**  
deciding (S4) on the basis of the result of said processing (S3), whether a first  
handover condition based on location information is fulfilled or not, when the first  
handover condition is not fulfilled, [ and ] checking (S5) subscriber specifications,  
whether or not another measurement related to a handover is to be performed,  
wherein said [ concerning ] another measurement [ (S5) ] results in a determination of  
a second [ for a ] handover condition,  
designating (S9) a next base transceiver station in said communication network,  
to which the communication with said mobile station (MS) is to be directed from a  
current base transceiver station, when the first handover or the second handover  
condition is fulfilled,

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21 triggering a handover (**S10**) of the communication connection of the mobile  
 22 station (**MS**) from the current base transceiver station to the next base transceiver  
 23 station designated in said designating step (**S10**), and  
 24 performing (**S11**) the handover.

1 28. (Unchanged) A method according to claim 27, wherein  
 2 in said processing step (**S3**) at least one additional parameter is processed  
 3 together with said location information related to the mobile station (**MS**) and position  
 4 information related to the base transceiver stations (**BTS 1A, BTS 1B, BTS 2, BTS 3**).

1 29. (Unchanged) A method according to claim 28, wherein  
 2 said additional parameter is based on a signal quality.

1 30. (Unchanged) A method according to claim 27, further comprising a location  
 2 information obtaining step (**S2**) comprising  
 3 a step of determining said location information related to the mobile station  
 4 (**MS**) and  
 5 a step of transmitting said determined location information to a respective  
 6 network device (**BSC, MSC**) adapted to perform said processing step (**S3**).

1 31. (Unchanged) A method according to claim 30, wherein said step of determining  
 2 said location information related to the mobile station (**MS**) is executed in the mobile  
 3 station (**MS**).

1 32. (Unchanged) A method according to claim 30, wherein said step of determining  
2 said location information related to the mobile station (**MS**) is executed in a network  
3 element on the network infrastructure side.

1 33. (Unchanged) A method according to claim 30, wherein said step of determining  
2 said location information related to the mobile station (**MS**) is based on at least one of  
3 the following methods:

4 locating by a global positioning system;

5 locating by a time of arrival;

6 locating by an observed time difference.

1 34. (Unchanged) A method according to claim 30, wherein said location information  
2 obtaining step (**S2**) is executed periodically.

1 35. (Unchanged) A method according to claim 30, wherein said location obtaining  
2 step (**S2**) is executed upon predetermined occasions.

1 36. (Unchanged) A method according to claim 35, wherein said predetermined  
2 occasion is a attachment procedure of the mobile station (**MS**) to the communication  
3 network.

1 37. (Unchanged) A method according to claim 27, wherein,  
 2 if the first handover condition is not fulfilled, on the basis of the checking of the  
 3 subscriber specifications,  
 4 the method **further comprises the steps of**  
 5 checking (**S5**), whether a further measurement is to be performed,  
 6 selecting (**S6**) a type of further measurement, if a measurement is to be  
 7 performed,  
 8 executing (**S7**) the measurement selected in said selecting step (**S6**),  
 9 verifying (**S8**), whether a measurement result represents a second handover  
 10 condition, and  
 11 if the result of said verifying step (**S8**) represents the second handover  
 12 condition, initiating execution of said target cell designation step (**S9**) for performing  
 13 the handover (**S10**, **S11**).

1 38. (Unchanged) A method according to claim 27, wherein the coverage area of the  
 2 base transceiver station designated in said designating step (**S9**) and to which the  
 3 communication connection is to be directed (**S10**) is a coverage area adjacent to the  
 4 coverage area of the current base transceiver station.

1 39. (Unchanged) A method according to claim 27, wherein the coverage area of the  
 2 base transceiver station designated in said designating step (**S9**) and to which the  
 3 communication connection is to be directed (**S10**) is a coverage area not adjacent to  
 4 the coverage area of the current base transceiver station.



1 40. (Unchanged) A method according to claim 39, wherein the coverage area not  
2 adjacent to the coverage area of the current base transceiver station to which the  
3 communication connection is to be directed (**S10**) is known to the communication  
4 network.

1 41. (Unchanged) A method according to claim 40, wherein the base transceiver  
2 station (**BTS**) with the coverage area not adjacent to the coverage area of the current  
3 base transceiver station, to which the communication connection is to be directed  
4 (**S10**), is a predetermined base transceiver station (**BTS**).

1 42. (Unchanged) A method according to claim 41, wherein the position information  
2 of the predetermined base transceiver station (**BTS**) is stored in a subscriber identity  
3 module (**SIM**) or in the mobile station (**MS**).

1 43. (Amended Once) A device for controlling a handover procedure for  
2 a mobile station (MS) communicating in a communication network and being  
3 movable therein,  
4 said communication network comprising  
5 a plurality of base transceiver stations being adapted to perform a  
6 communication with said mobile station (MS) within its coverage area,  
7 **said device comprising**  
8 a processing means (2) for processing location information related to said  
9 mobile station (MS) by comparing it with position information related to base  
10 transceiver stations (BTS), and for deciding on the basis of the result of said  
11 processing, whether a first handover condition based on location information is fulfilled  
12 or not, [ and ] for checking, when the first handover condition is not fulfilled, subscriber  
13 specifications, whether or not [ concerning ] another measurement [ for ] related to a  
14 handover is to be performed, wherein said another measurement results in a  
15 determination of a second handover condition, [ a designating means (4) ] and for  
16 designating a next base transceiver station in said communication network, to which  
17 the communication with said mobile station (MS) is to be directed [ switched ] from a  
18 current base transceiver station, when the first handover condition or the second  
19 handover condition is fulfilled, and  
20 a triggering means (5) for triggering a handover of the communication  
21 connection of the mobile station (MS) from the current base transceiver station to the  
22 next base transceiver station designated by said designating means (4).

1 44. (Unchanged) A device according to claim 43, wherein  
 2 in said processing means (2) at least one additional parameter is processed  
 3 together with said location information related to the mobile station (**MS**) and position  
 4 information related to the base transceiver stations (**BTS 1A, BTS 1B, BTS 2, BTS 3**).

1 45. (Unchanged) A device according to claim 44, wherein  
 2 said additional parameter is based on a signal quality.

1 46. (Unchanged) A device according to claim 43, further comprising means (1)  
 2 for determining location information related to the mobile station (**MS**) and  
 3 for transmitting said determined location information to a respective network  
 4 device (**BSC, MSC**) performing said processing.

1 47. (Unchanged) A device according to claim 46, further comprising a memory  
 2 means (3) for memorizing location information related to the mobile station (**MS**) and  
 3 position information related to the base transceiver stations (**BTS**).

1 48. (Unchanged) A device according to claim 46, wherein said means (1) for  
 2 determining location information related to the mobile station (**MS**) and for transmitting  
 3 said determined location information to a respective network device (**BSC, MSC**)  
 4 performing said processing are located in the mobile station (**MS**).

1 49. (Unchanged) A device according to claim 46, wherein said means (1) for  
 2 determining location information related to the mobile station (MS) and for transmitting  
 3 said determined location information to a respective network device (BSC, MSC)  
 4 performing said processing are located in a network element on the network  
 5 infrastructure side.

1 50. (Unchanged) A device according to claim 46, wherein said means (1) for  
 2 determining the location information related to the mobile station (MS) is adapted to  
 3 perform said determination according to at least one of the following methods:  
 4 locating by a global positioning system;  
 5 locating by a time of arrival;  
 6 locating by an observed time difference.

1 51. (Unchanged) A device according to claim 43, further comprising a  
 2 measurement means (6) being responsive to the subscriber specifications and  
 3 adapted to  
 4 check, whether a further measurement is to be performed,  
 5 select a type of further measurement, if a measurement is to be performed,  
 6 execute the selected measurement,  
 7 verify, whether a measurement result represents a second handover condition,  
 8 and  
 9 if said second handover condition is verified, forwarding the  
 10 measurement result to said handover condition processing means (2) for performing  
 11 the handover.

## Appendix B Marked Up Version of the Amended Abstract

In the present invention, a method [ is proposed ] for performing a handover procedure for a movable mobile station [ (MS) ] communicating in a communication network is disclosed. [ and being movable therein, said ] The communication network [ comprising ] includes a plurality of base transceiver stations [ being ] adapted to [ perform a communication ] communicate with mobile [ station (MS) ] stations within its coverage area. [ , said ] The method [ comprising the steps of ] includes processing [ (S3) ] location information related to the mobile station [ (MS) ] and position information related to the base transceiver stations. [ (BTS 1A, BTS 1B, BTS 2, BTS 3) , ] The method also includes deciding, [ (S4) ] based on the [ basis of the ] result of [ said ] the processing, [ (S3), ] whether a first handover condition is fulfilled [ , ] and designating [ (S9) ] a next base transceiver station in [ said communication ] the network [ , ] to [ which the communication with said ] communicate with the mobile station. [ (MS) is to be directed from a current base transceiver station, when ] When the first handover condition is fulfilled, [ triggering ] a handover [ (S10) of the communication connection ] of the mobile station [ (MS) ] from the current base transceiver station to the next designated base transceiver station is triggered. [ designated in said designating step (S10), and performing (S11) the handover. Furthermore, a ] A corresponding device for controlling [ said ] handover is [ proposed ] also disclosed. [ The advantage of the present invention is, that base ] Base transceiver stations [ can be used which ] that do not permanently transmit a

broadcast control channel or base stations which can be turned off [ , ] when no subscribers are within the coverage area may be used.